CITY OF ALBUQUERQUE

PLANNING DEPARTMENT – Development Review Services

Richard J. Berry, Mayor

March 27, 2015

Ron Hensley, P.E.
The Group
300 Branding Iron Rd. SE
Rio Rancho, NM 87124

RE: **Paradise RV Park Phase 1 (File: K08D003)**
Drainage Report, Engineer's Stamp Date 1-23-2015
Grading and Drainage Plan, Engineer's Date 1-23-2015

Dear Mr. Hensley:

Based upon the information provided in your submittals received 1-30-2015 the above referenced Drainage Report and Grading and Drainage Plan cannot be approved for Grading Permit until the following comments are addressed:

It is understood that this drainage report is intended to complete the work begun by Larry Read. Larry Read had 2 previous reports dated 8/10/2011 and 10/15/2013, with the later relying on information from the previous report. Those reports were used to support the approved conceptual G&D plan for Site Plan for Building Permit but were never approved for Building Permit. If you are relying on analysis from the previous reports for Building Permit approval, they must be included in this report. Furthermore, the engineer who signs and stamps the Work Order Construction plans is taking responsibility for the storm drain hydraulic analysis and supporting hydrology of the offsite basins. Therefore you must review and take responsibility for the existing calculations or reanalyze it. If you intend to use the analysis in the Larry Read reports, they must be included in an appendix. Note that the 8/10/2011 Larry Read report contains storm drain schematics and hydraulic analysis. In short, this report needs to be a stand-alone document. It should be well organized to be able to follow easily. The following information should be included in this drainage report if the Larry Read report is to be included and combined with this report.

- This report separates Basin 300 into 2 basins. Indicate why.
- In the L.Read report, the pond on Phase II site retains runoff from undeveloped (A = 100%) Basins 200, 300, 800, and 900. Though in the developed condition Basin 800 is intended to go down 106th St.
- Per the L.Read report, up to the SW corner of site the developed flows of Basins 300 to 900 were calculated to be 678.74 cfs. **This does not include developed Basin 200 and needs to be included**. Basins 300 thru 900 are based on developed Land Treatments B=3, C=30, and D=67%. Summarize this information in the storm drain analysis.
- Include excepts from the Greiner Report as done in the 8/10/2011 report showing what land treatments were intended and why the above treatments vary from the Greiner report.
- At stated above, flows from Developed Basin 200 (201 and 202) need to be added to developed flows into SD in Volcano. Land treatments should be similar to those used in Basin 100 (101 thru 105). The L. Read report calculated 17.57 from Basin 200, but this is

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too low since it is based on B,C, D = 5, 76, 19 respectively. The SD schematic shows 737 cfs. Determine the correct flow. I'm estimating about 25 cfs from developed Basin 200.

- Was street flow from Volcano Road included in the 737cfs value?
- The same schematic mentioned above shows a 96" dia SD beyond the 72" SD. Review the hydraulic calculations and verify the validity or modify if needed.
- The outfall into the pond shows two pipe penetrations into the Dam. This may require approval by the state engineer. Inquiries to DMD will be made, and the determination on this will be forthcoming.

Other comments are as follows:

- Collect the "first flush" from the impervious area (building and paved parking). There appears to be opportunity at north side of access drive to building, within the curbed islands, and on south side (where Basin 104 label is shown).
- The pond volume must be based on the 100Yr -10day storm, not the 24 hr storm. Pond Data need not include 2x100 yr storm.
- Indicate with crosshatching the extents of the gravel area, and that of the paved area.
- Label street names
- Q values shown on the plan do not match those shown on the "Hydrologic Data" table on same sheet (update). On same table correct the land treatments shown for Basin 990
- On Page 3, Section II, Hydrology:
    a. The analysis shown in the table used the 6-hr storm not the 24-hr as stated. (also stated at top of page)
    b. Correct the units under the V100 label
    c. The V100 for Basin 900 is 1.33 Ac-ft
- The 100-yr 6-hr storm should be used in the analysis, not the 24 hr.
- Page 6, Basin 91 – correct land treatments (typo under C)
- At NW corner of site, near Play area, attempt to better direct offsite flows south by grading. Previous plan used a berm.
- Call out the retaining wall on western boundary at building. South of the pool there is a 2' grade difference. A berm may increase the length of wall needed.
- The Q in the 24" SD in Leonidas Lane of 27.9 cfs does not match the combined basins flow of 29.07 cfs (update value)

Regarding the 36" SD in Volcano that connects to the SD in Leonidas:

- Report states that capacity is based on Street Capacity. Half street capacity is 53.5 cfs (107cfs/2) but Hydraflow uses 23.98 cfs based on capacity of inlets, and bypasses 11.9 cfs.
- So that there are not bypass flows, base the street flow on the capacity of the inlets rather than the street capacity, and determine the length of road that that capacity supports. Future inlets will have to be installed at the beginning of that length. Determine if that length goes beyond the property line. If not, more upstream inlets will be required.
- The 36" SD should be based on flows from inlets on ***both*** sides of the developed road.
- The Type D inlet should be based on an orifice area of 3.84 SF.
- Provide documentation showing how Hydraflow determines inlet capacities
- In Hydraflow, Curb inlet ht is shown as 8" but the actual opening height is 6.25"
- Inlet report indicates that 0.80cfs and 0.76 cfs bypass Leonidas lane inlets. Where does the bypass go? Indicate in report.
- Provide calculations showing that the 6" waterblock at the access drivepad is sufficient so as not to contribute to bypass flows in Leonidas Lane.
- Provide calculations showing 30" culvert to pond is sufficient to divert offsite flows to pond. Top of Pipe appears to be higher than road.

If you have any questions, you can contact me at 924-3695.

Sincerely,

Rita Harmon, P.E.
Senior Engineer, Planning Dept.
Development Review Services

Orig: Drainage file
c.pdf via Email: Recipient

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